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which includes most aspects of the entire **Bluetooth protocol stack**. It was used to derive simulation
nms.lcs.mit.edu/publications/tan-ms-thesis.ps

[Development of a Service Discovery Architecture for the... - Schwingenschlögl, Heigl \(2000\)](#) [\(Correct\)](#) [\(2 citations\)](#)

environments, services can 2 Figure 1: **Bluetooth Protocol Stack** be discovered using SDP and can be
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Protocol Architecture The Basic **Bluetooth Protocol Stack** Defines The Following Protocols, From
www.ececs.uc.edu/~cordeicm/papers/globecom2001.pdf

[Architectural Overview of Intel's Bluetooth Software Stack - Kris Fleming Mobile](#) [\(Correct\)](#)

and security, involve mapping the **Bluetooth protocol stack** into operating systems' frameworks in
developer.intel.com/technology/itj/q22000/articles/./pdf/art_2.pdf

[Mobile Ad-hoc Communication Issues in - Ubiquitous Computing The](#) [\(Correct\)](#)

(HCI) to the lower layers of the **Bluetooth protocol stack**, while the higher layers of the protocol
www.vision.ethz.ch/antifako/pwc03.pdf

[Modeling and Evaluation of Bluetooth MAC Protocol - Carlos De Morais](#) [\(Correct\)](#)

Concerning the MAC, the basic **Bluetooth protocol stack** defines the following protocols: Link
www.ececs.uc.edu/~cordeicm/papers/icccn2001.pdf

[Unknown -](#) [\(Correct\)](#)

Architecture as it applies to the **Bluetooth protocol stack**. Towards the end the paper also briefly
www.giac.org/practical/gsec/Nikhil_Anand_GSEC.pdf

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be developed in the future. 2.2. The **Bluetooth protocol stack** Remote applications must run over
www.grenoble-soc.com/proceedings03/Pdf/31-Radzeski.pdf

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(Cottrell 1996) service which uses the **Bluetooth protocol stack** and provides a system for
alpskari.vip.fi/~avs/bt-crowds-20030618.pdf

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26 Figure 3.9 **Bluetooth protocol stack**

www.scs.carleton.ca/~barbeau/Thesis/azondekon.pdf

[Comparison of Bandwidth Usage: Service Location Protocol... - Ottawa-Carleton..](#) [\(Correct\)](#)

.8 VIII List of Figures 2.1 **Bluetooth Protocol Stack** .2.2 Bluetooth

www.scs.carleton.ca/~barbeau/Thesis/govea.pdf

[Blueware: Bluetooth Simulator for ns - Tan \(2002\)](#) [\(Correct\)](#)

simulator implements many aspects of the **Bluetooth protocol stack** according to the Bluetooth speci cation
www.lcs.mit.edu/publications/pubs/ps/MIT-LCS-TR-866.ps

[A comparison of SCO and ACL packets for audio transmission in... - Holmes \(2002\)](#) [\(Correct\)](#)

rarely be achieved in practice. 2.2 The **Bluetooth protocol stack** Figure 1 is a diagram of the protocol
mms.ecs.soton.ac.uk/papers/2.pdf

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the address book and agenda. Although the **Bluetooth protocol stack** was designed to be a general
www.iam.unibe.ch/%7Ervs/publications/TR-IAM-02-004.pdf

[Time Analysis Of The Handover Procedure In A Bluetooth Network - Corvaja](#) (Correct)

just above the baseband level of the **Bluetooth protocol stack**, that is on the Link Manager (LM) level
www.ctr.kcl.ac.uk/Private/Mischa/PIMRC2002/support/.../papers/cr1427.pdf

[Security in Wireless Networks - Raman](#) (Correct)

via Charon. 59 Figure 23: Bluetooth Protocol
students.cs.tamu.edu/barani/Wireless.pdf

[BWIG: Bluetooth Web Internet Gateway - Nicolas Rouhana University](#) (Correct)

In The Next Section, We Introduce The **Bluetooth Protocol Stack** As Well As The Bluetooth Sig Lan Access
www-rp.lip6.fr/site_rp/_publications/228-isscc02.pdf

[Performance Improvement Studies In Bluetooth Piconet.. - Sudaakeran.. \(2001\)](#) (Correct)

The Sdp Pdu's Over The Air. Fig 2. The **Bluetooth Protocol Stack** For The Service Discovery Profile [1]
www.hipc.org/c2001/_public/2001/posters/p12.pdf

[First Experiences with Bluetooth in - The Smart-Its Distributed](#) (Correct)

(HCI) to the lower layers of the **Bluetooth protocol stack**, while the higher layers of the
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are quite common and technologies such as **Bluetooth** are bringing networking to consumer devices.
capable as every room, appliance, and even light **socket** begins to "think. A full explication of Things
nelson.www.media.mit.edu/people/nelson/research/hive-asama99/hive-asama99.ps.gz

An Efficient Simulation Environment for the Design of... - Yongjin Ahny Daehong (Correct)
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Abstract To enable the validation of HW/SW-mixed **Bluetooth** device design in the context of PICONET, we
poppy.snu.ac.kr/papers/DATE2002_yongjin.pdf

Bringing Flexibility into Ubiquitous Personal Networks - Moo Ryong Jeong (Correct)
that use common network interfaces such as **Bluetooth** and Wireless LAN. Then, these devices can be
A Internet Figure 1 Example of Service Mobility **Bluetooth** or Wireless LAN Device A1 Device B1 Device A2
Session Manager Interface Manager SL **socket** SL **socket** **socket** **socket** network interface
www.mlab.t.u-tokyo.ac.jp/publications/./2001/jeong_jeice01s.pdf

Enhancing e-commerce security using - Gsm Authentication Vorapranee (Correct)
in this paper. However, Infrared, a cable, or **Bluetooth** 1 could be employed for 1
1 could be employed for 1 www.bluetooth.com 3 the purpose (such means of
protected against eavesdropping using Secure **Socket** Layer (SSL) or Transport Layer Security (TLS)
www.ma.rhul.ac.uk/techreports/2002/RHUL-MA-2002-3.pdf

How does the Grid extend the Internet, and what is the future.. - Adcock (Correct)
developing technologies such as Jini and **Bluetooth**, how we go about daily life. 2 The Grid and
several years, with the continual development of **Bluetooth**, a wireless network interface, and the
electricity is coming from, all we see is the wall **socket**. It is as if there is an infinitely large
mms.ecs.soton.ac.uk/papers/27.pdf

Paving The Road To Systems Beyond 3g - The Ist Mind Project - Dave Wisely And (Correct)
MIND Mobile Routers Hiperlan Hiperlan/802.11 **Bluetooth** UMTS Vertical Handover Hiperlan/802.11 AAL2
MIND Mobile Routers Hiperlan Hiperlan/802.11 **Bluetooth** UMTS Vertical Handover Hiperlan/802.11 Fig.
the IP2W (IP to Wireless) and the ESI (Extended **Socket** Interface) The IP2W serves to allow a common IP
www.ctr.kcl.ac.uk/Private/Mischa/PIMRC2002/support/./papers/cr1664.pdf

Wireless Ip Adaptation Layer: - An Open Performance (Correct)
project has used IEEE802.11b, HiperLAN/2 and **Bluetooth** in the prototyping environment, but the WAL
has included HiperLAN, IEEE802.11b and **Bluetooth** (BT) Secondly, there is adaptation to the
hides different air interfaces behind a generic **socket**-type interface. This is a similar approach to the
www.ctr.kcl.ac.uk/Private/Mischa/PIMRC2002/support/./papers/cr1552.pdf

Mobile Identity Management - Jendricke, Kreutzer, Zugenmaier (Correct)
with wireless communication interfaces like **bluetooth** or infrared. However they only have access
a confidential communication, e.g. by using secure **socket** layer SSL, or PGP. A database stores the
ftp.informatik.uni-freiburg.de/documents/reports/report178/report00178.ps.gz

PinPlay: Networking Objects through Pins - Van Laerhoven, Schmidt, Gellersen (2002) (Correct)
deployment of wireless solutions (e.g. 802.11 and **Bluetooth**) Pin&Play is not challenging any of these
is the use of pushpinlike connectors, for **socket**-less attachment of objects to a Pin&Play surface.
(they would be the plugs if the network were not **socket**-less) Secondly, they should support attachment
www.comp.lancs.ac.uk/~kristof/old/papers/ubicomp_2002a.pdf

Minimal TCP/IP implementation with proxy support - Dunkels (2001) (Correct)
time wireless networking technologies, such as **Bluetooth** [HNI 98] and IEEE 802.11b WLAN [BIG
using a short range wireless technology such as **Bluetooth**. The router and the proxy communication can use
functions. 53 B BSD **socket** library 59 B.1 The representation of a **socket**

www.sics.se/~adam/thesis.pdf

Mobile Computing with Python - Weatherall, Scott (2001) (Correct)

into everyday use. Already technologies such as **BlueTooth**[2] and WAP[19] enable users to read their pp 8-15, October 1997. 2] Specification of the **Bluetooth** System Version 1.0A. From www.python.org. Python interpreter, MoPy also adds thread, **socket** and serial support for the Psion platform. The www.uk.research.att.com/~jnw/papers/koala.ps.gz

Bandwidth Usage Analysis of Service Location Protocol - Barbeau (2000) (Correct)

Microsystems [11]Service Discovery Protocol of **Bluetooth** [2]Service Location Protocol (SLP) of IETF IETF Request for Comments: 2396, August 1998. 2] **Bluetooth**. Specification of the **bluetooth** system. the machine of the server and port number of the **socket** on which the server is listening. There is, www.scs.carleton.ca/~barbeau/Publications/2000/ICPP/paper.ps

Group awareness in Bluetooth - Parkkinen (Correct)

Group awareness in **Bluetooth** Jarmo Parkkinen Department of Mechanical Jarmo.Parkkinen@hut.fi 40905V ABSTRACT **Bluetooth**-technology enables objects to communicate with known artefacts, like home piconet of one telephone-**socket** and three headsets, the user's mental model of www.cs.hut.fi/Opinnot/Tik-86.174/Group_awareness_in_Bluetooth.pdf

Combining Trust Management, Jini, IPv6, and Wireless links: A.. - Nikander (Correct)

stack, we have standard link layers such as **BlueTooth**, IEEE 802.11 WLAN, etc. IPv6 is placed directly are represented at the operating system level as **socket** like objects instead of being pure Java objects. the operating system. The next difference is that **sockets** (and other **socket** like objects such as leases) www.tml.hut.fi/~pnr/publications/nikander_huc2k.pdf

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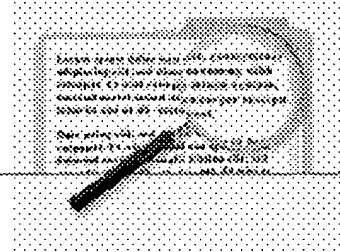
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Bluetooth® Technologies

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By James Kardach

The Bluetooth technology was developed to provide a wireless interconnect between small mobile devices and their peripherals. Target markets are mobile computers, mobile phones, small personal digital assistants and peripherals. Bluetooth technology creates many useful mobile usage models because the connections can occur while mobile devices are being carried in pockets and briefcases. Learn more about these usage models and find out how the Bluetooth architecture is optimized to enable them.

[Architectural Overview of Intel's Bluetooth Software Stack](#)

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Foreword:

[Wireless Mobility and Communications](#)

— [Dr. Kevin Kahn](#)
Intel Fellow and
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Architecture, Intel Corp.

preface

[Duncan Glendinning](#)
Director, MCG Mobile
Communications Operation,
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Intel Technology Journal

Intel's vision of "A Billion Connected Computers" has been the catalyst for a number of Intel-defined programs to connect computers. Wireless connectivity represents the next frontier for mobile computing, and Intel has been investigating the challenges of wireless connections for mobile PC's for some time now. A key decision that had to be made was which radio technology should be built into mobile computers. There was no existing standard that gave the right performance, was available for worldwide usage, was extremely low powered, and was inexpensive enough to build into a broad range of devices. Consequently, Intel, together with our partners, set about creating a new standard. This resulted in Bluetooth® technology, a technology that allows peripherals to be connected wirelessly.

The need for anywhere anytime connectivity for mobile PC's is about to be answered. We are soon to

This paper describes the architecture of the software stack implemented to support Microsoft's operating systems under the Windows Driver Model. Read how Intel is implementing PC software to integrate wireless capability into the mobile PC platform.

Enabling Always On, Always Connected (AOAC) Computing with Bluetooth Technology

By Kristoffer Fleming, Robert J. Hunter, Jon Inouye, and Jeffrey Schiffer

For the past several years, Intel has been exploring "Always On, Always Connected" (AOAC) usage mode for both the home and mobile personal computer. Currently, there is a lot of interest and development effort into specifications for a new short-range wireless technology that, when coupled with advances in power management, smarter applications, cellular networks, and information kiosks, will make AOAC a reality for mobile notebook platforms. This paper focuses on key mechanisms provided by the technology to support AOAC applications.

Integrating Bluetooth Technology into Mobile Products

By Graham Kirby

The long-term promise of Bluetooth technology is wireless connectivity between devices occurring without user involvement. By definition, this precludes plugging things in, or positioning things in a special way so that they can talk to one another. Consequently, Bluetooth technology has to be integrated into the target devices themselves. Read how Intel is meeting this challenge in the areas of antennas, emissions, and layout.

Wireless Technologies

Overview of IEEE 802.11b Security

By Sultan Weatherspoon

This paper addresses one of the key issues surrounding wireless connections: security. Everything that is transmitted or received over a wireless network can be intercepted. Therefore, encryption and authentication become key issues when developing a wireless networking system. The goal of adding these security features is to make wireless traffic as secure as wired traffic. Learn how the IEEE 802.11b standard provides a mechanism to do this by encrypting the traffic and authenticating nodes via the Wired Equivalent Privacy (WEP) protocol.

The Evolution of Third-Generation Cellular Standards

By Phillip Ames and John Gabor

The way we communicate electronically is continually evolving and leading to ever more challenging problems, especially in the area of wireless communication. Third-generation is a term given to wireless services that, for example, allow users to make video calls from a mobile terminal, while simultaneously accessing a remote database, or while receiving e-mails and phone calls. The foundation for these services has already been laid in the second-generation standards, the existing structure of today's digital mobile phone networks. This paper provides an overview of the evolutionary path of mobile/terrestrial cellular standards, leading up to the now defined third-generation cellular standards.

enter a very exciting era for mobile computing. Over the next one to five years, we are going to see the emergence of new devices, applications, and usage models. The mobile PC as we know it today will evolve to where it PC will affect all types of users in all parts of the world.

The six papers in this issue of the Intel Technology Journal offer a lively discussion on Bluetooth and wireless connectivity. The first and second papers present the hardware and software architectural overviews. The third and fourth papers look at integration details and the issues and benefits of Always On, Always Connected computing.

The fifth and sixth papers address other wireless technologies and directions. The fifth paper specifically addresses security, one of the key issues surrounding wireless connections. If it is convenient for one individual to access business information, how do we prevent others from intercepting the information? The sixth paper looks into the evolution of cellular phone infrastructure as it moves towards being able to support significant data rates for computing applications.

We welcome your comments about the Journal and its papers.

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